Model MDPA Stainless Multi-Stage Volute Pump

Disassembly And Reassembly Manual

To disassemble and reassemble the pump, follow the procedure on the next page. Use Fig.1 on this page and Fig.2 on next page as reference.

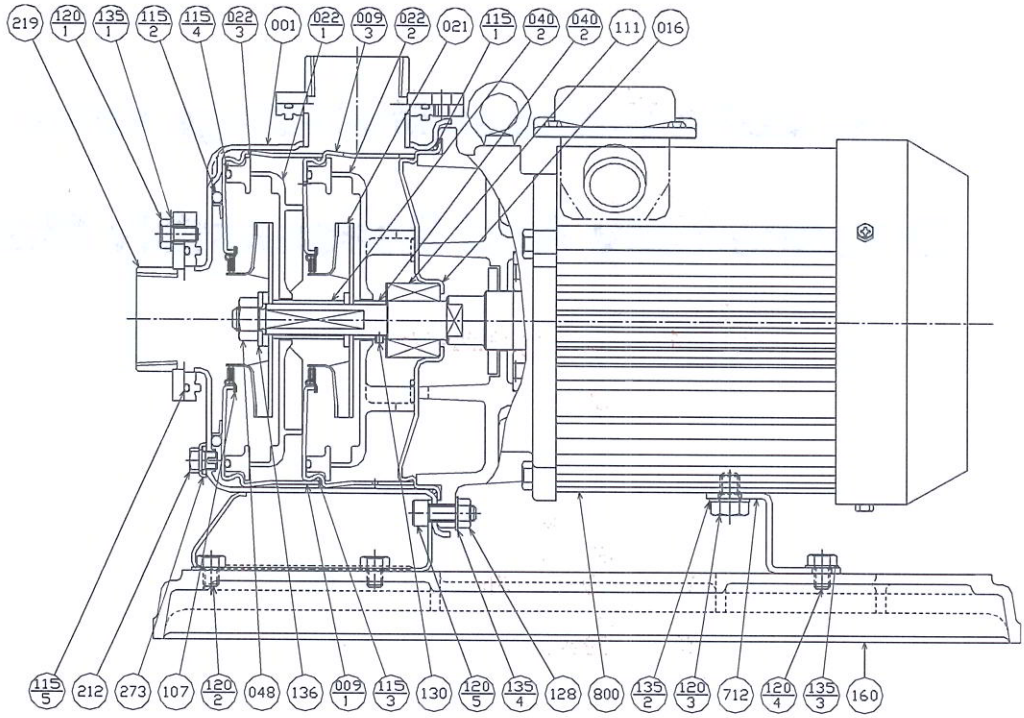


Fig.1 Sectional View

No.	Part Name	Material	Q'ty	Remarks
115-5	O-ring for companion flange	NBR	2	P/N 83000009290
115-4	O-ring for guide vane	NBR	N	83000009280
115-3	O-ring for intermediate casing	NBR	N-1	83000009270
115-2	O-ring for seal ring	NBR	1	83000009260
115-1	O-ring for outer casing	NBR	1	83000009250
111	Mechanical Seal ring	Ceramics/ Carbon	1	U01QQ003180
107	Liner ring	EPDM/ SUS304	N	
048	Impeller nut	SUS304	1	
040-2	Shaft sleeve for discharge	SUS304	1	
040-1	Shaft sleeve for intermediate	SUS304	N-1	
022-3	Guide vane side plate	PPS	N	
022-2	Guide vane B	PPS	1	Not applied for single stage model
022-1	Guide vane A	PPS	N-1	Applied only for single stage model
021	Impeller	SUS304	N	
016	Casing cover	SUS304	1	
009-3	Intermediate casing for discharge	SUS304	1	
009-2	Intermediate casing	SUS304	N-2	
009-1	Intermediate casing for Suction	SUS304	1	
001	Outer casing	SUS304	1	

No.	Part Name	Material	Q'ty	Remarks
800	Motor	—	1	
712	Motor Support	SPHC	1	
273	Seal washer	SUS304/ NBR	2	
219	Companion flange	SUS304	2	
212	Plug	SUS304	2	
160	Base	FC150	2	Model of SPCC for 25 and 32 size
136	Shaft washer	SUS304	1	
135-4	Flat washer for outer casing	SUS304	8	
135-3	Flat washer for Support & Base	SUS304	2	
135-2	Flat washer for Motor & Base	SUS304	1/2	Two washers are applied only for 1.1kW or less
135-1	Flat washer for companion flange	SUS304	8	
130	Hex socket set screw	SUS304	1	
128	Hex nut for outer casing	C3602	8	
120-5	Hex bolt for tightening outer casing	SUS304	8	
120-4	Hex bolt for tightening support & base	SUS304	2	Two bolts are applied only for 1.1kW or less
120-3	Hex bolt for tightening motor & support	SUS304	1/2	
120-2	Hex bolt for tightening pump & base	SUS304	4	
120-1	Hex bolt for tightening companion flange	SUS304	8	

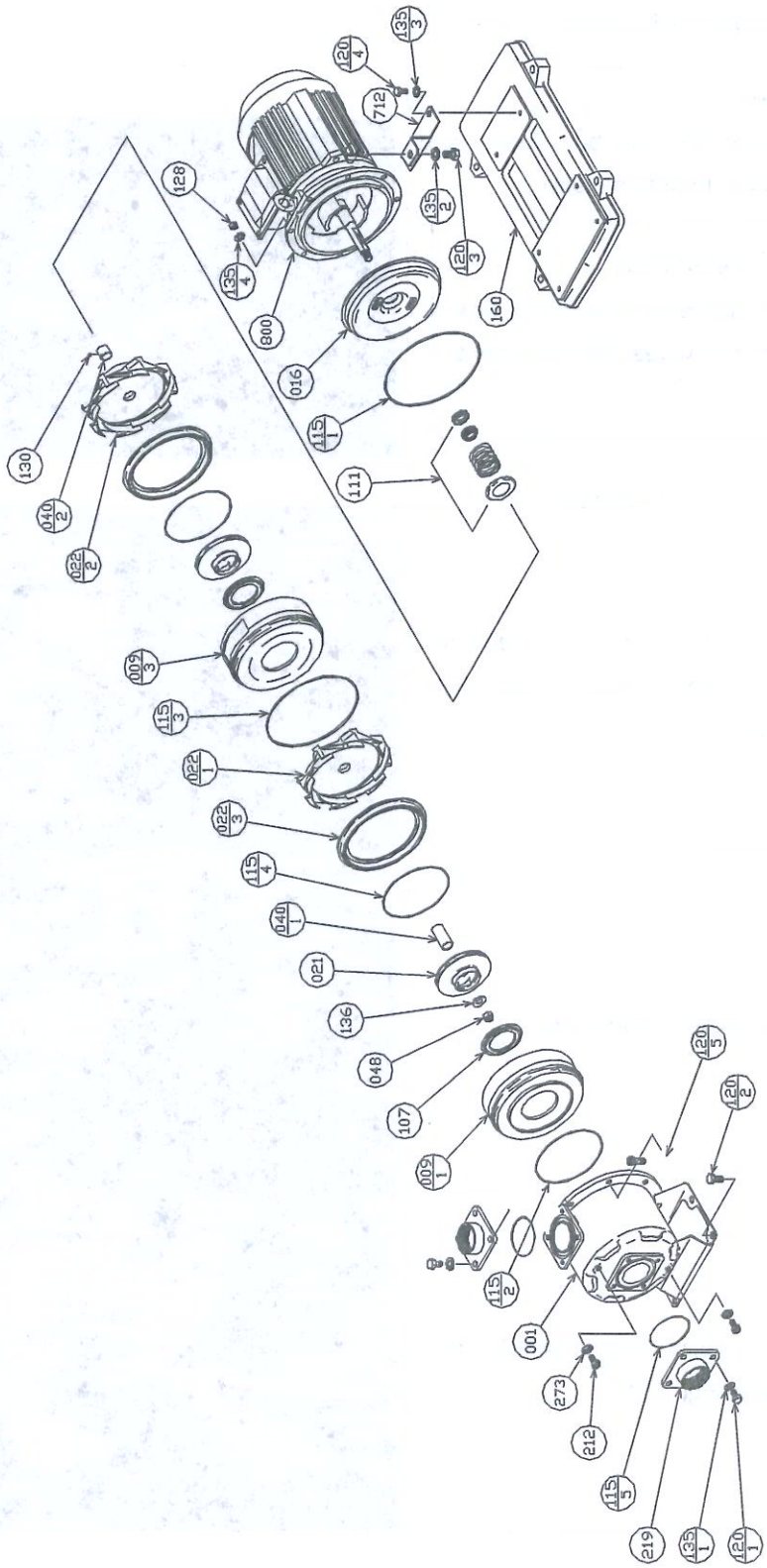
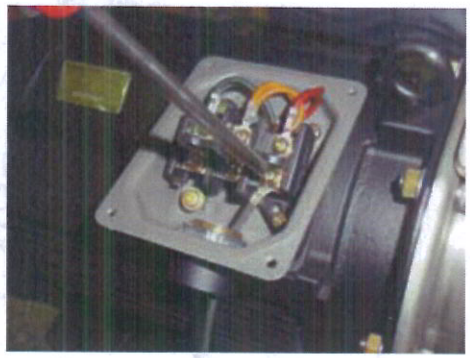


Fig. 2 expleded View of Components

(1) Disassemble according to the following procedure.

① Turn off the power. ② Remove the moter terminal box cover, and disconnect the wires from terminals. **⚠ CAUTION** **Fit the cover of the motor terminal box after disconnect the wires. Water enters in the box.** ③ Remove the companion flange bolts(120-2).	
④ Remove the pump fixing bolts(120-1)and the motor support filing bolts(120-3). Remove the pump from the base(160).	
⑤ Put the pump and ground motor side.	
⑥ Loosen the outer casing fixing nut(128) and remove the outercasing(001).	

⚠CAUTION

Number the intermediate casings and shaft sleeves in the sequence they are removed, stating from the suction side. At reassembling, these parts must be reinstalled in the correct sequence.

⑦ Remove the intermediate casing for suction(009-1).

⑧ Loosen the impeller-fixing-nut(048).

⚠ CAUTION

Please insert a wrench from the hole of the motor, and fix the shaft by putting the wrench on the two flat surfaces.

⑨ Remove the shaft washer(136) and impeller(021) in order.

⑩ Remove the guide vane(022), the shaft sleeve(040-1), intermedeate casing (009) and impeller in sequence, numbering them as you do so.

The parts removed thus far are common to all models. Quantities of parts in the remainder of this procedure vary depend on the number of stages of the pump.

⑪ Loosen the lockscrew(130) on the final stage sleeve(040-2) , and remove the sleeve.

⑫ Remove the rotating side of the mechanical seal(111) from the shaft.

⚠ CAUTION

Do not adhere the dirt or dust to the sealing faces of the mechanical seal.

⑬ Remove the caseing covor(016).

⚠ CAUTION

Remove the casing cover without fixed side of the mechanical seal touching the shaft.

⑭ Push out the fixed side of the mechanical seal(111) from casing covor.

You can use a screwdriver, in case that it is hard for you to remove.

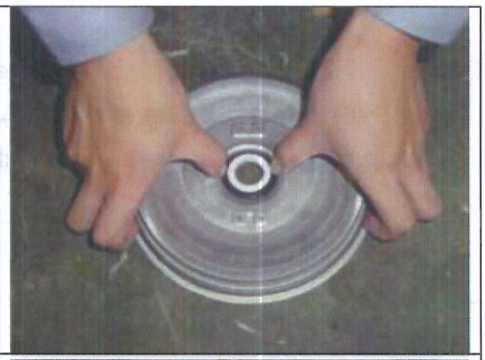
Disassembly of all parts(excepting the motor) is completed now.

(2) Reassenble according to the following procedure.

① Fit the fixed side of mechanical seal (111) into the recess in casing cover (016).

⚠CAUTION

Fit the fixed side of mechanical seal securely. Take care not to apply dirt of fingerprints to the sealing faces.

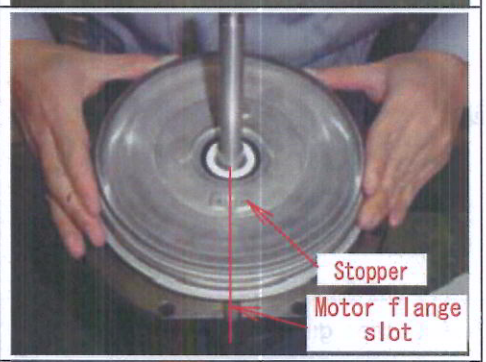


② Put the casing cover(016) on the motor.

⚠ CAUTION

Coordinate between a ditch of motor flange and clasp of casing cover to the same position.

Take care that fixed side of mechanical seal does not touch the shaft.



③ Install the rotating side of mechanical seal in the shaft.

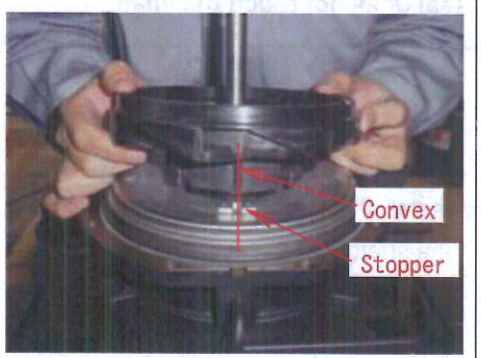
④ Put the spring and holder of mechanical seal.

⑤ Insert the shaft sleeve (040-2) completely (Hex socket set screw (130) side downward). Push downward completely and tighten the set screw.

⑥ Fit the O-ring(115-1) into the recess in the casing cober.

⑦ Put the guide vane(022) on the casing cover(016).

> ⚠ **CAUTION**
> **Coordinate among convex part of the guide vane, clasp of casing cover and discharge side to the same position.**



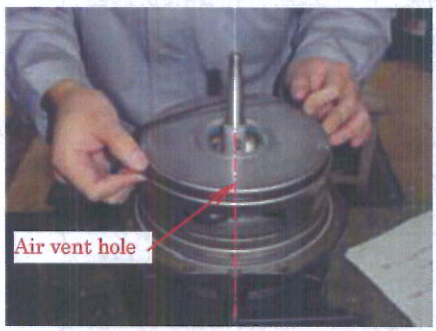
⑧ Put the O-ring (115-4) to guide vane (022).

⑨ Install the impeller (021), the shaft sleeve(040-1) in the shaft.

⑩ Install the intermediate casing for discharge(009-3) in casing cover , and put the O-ring to the intermediate casing.

⚠ CAUTION

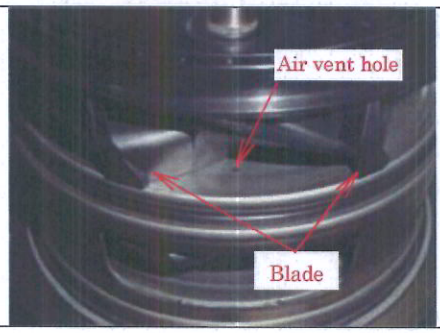
An air vent hole of the intermediate casing is at the side of the discharge.



⑪ Put the guide vane on the intermedeate casing.

⚠ CAUTION

Prevent the blade part of the guide vane from coming on the air vent hole.



Reassemble the rest of the parts in the oreder that they were marked in when were desassembled. Other points for attention are as follows:

⚠ CAUTION

(1) Do not desassemble the motor. If the motor needs to be desassembled , Contact to technics.

(2) Replace the O-rings with new one every time the pump is reassembled.

(3) Replace damaged or worn parts completely.

(4) Tighten bolts and nuts sequentially, so that bolts on either side are tightened evenly.

(5) You are recommended to replace the mechanical seal even if they are not worn.

(6) When reassembly is complete , rotate the pump by hand , and check smooth rorating.

(3) The consumable parts list is as follows

Size	Output (kW)	Mechanical seal	O-ring (Casing cover)	O-ring (シールリング)	O-ring (Intermediate casing)	O-ring (Guide vane)	O-ring (Flange)
		111	115-1	115-2	115-3	115-4	115-5
25 - 32	Single 0.4	φ15	φ3.1 × φ150	75 × 6.3		φ3.1 × φ125	φ3.1 × φ55
	0.4						
	Single 0.6						
	0.75						
	1.1			75 × 6.3 φ1.5 × φ70 excluding for 3-stage model			
40 - 50	0.75	φ20	φ3.1 × φ175	φ5.7 × φ120	φ3.1 × φ160	φ3.1 × φ145	φ3.1 × φ70
	1.1						
	1.5						
	2.2						
	3.7						